LEED 2009 for New Construction and Major Renovations

Project Checklist

SEATTLE PUBLIC UTILITIES - LANDSBURG DEVELOPMENT - PRELIMINARY

28 JULY 2010 - TETRA TECH - SUSTAINABILITY CONCEPT WORKSHOP

Sustainable Sites — Possible Points: 26

Y	N	?			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
	5		Credit 2	Development Density and Community Connectivity	5
	1		Credit 3	Brownfield Redevelopment	1
	6		Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
		2	Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
		1	Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
3		1	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
10		9	Credit 1	Optimize Energy Performance	1 to 19
	2	3	Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
		2	Credit 4	Enhanced Refrigerant Management	2
3			Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
	1		Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
	2		Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	N	?			
1		1	Credit 4	Recycled Content	1 to 2
		2	Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
		1	Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

1			Credit 1.1	Innovation in Design: Specific Title	1
1			Credit 1.2	Innovation in Design: Specific Title	1
1			Credit 1.3	Innovation in Design: Specific Title	1
		1	Credit 1.4	Innovation in Design: Specific Title	1
		1	Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Regional Priority: Specific Credit	1
1			Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

Total — Possible Points: 110

53	17	36	Total

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Figure 3-4. LEED Checklist

- Use of high-performance building envelope systems for energy conservation
- Use of high-performance HVAC systems –ground source loop heat pump
- Use of natural ventilation for cooling
- Use of natural daylight for lighting
- Use of solar power source and possible net-zero energy consumption
- Use of non-potable water for toilet flushing
- Use of high efficiency plumbing fixtures
- Use of native plants for vegetation
- Use of recycled, recyclable and regional materials.

The green design forum participants encouraged the project team to "push the envelope" to achieve LEED Gold or better and to make the Landsburg facility a showcase of environmentally friendly and sustainable design for SPU and the City of Seattle. One concept was to use this project as an environmental educational component during site tours conducted by SPU during the autumn salmon run.

SITE TRANSPORTATION FEATURES

9 Road/Landsburg Road Intersection

The primary access to the Landsburg facilities and Landsburg Park is at the intersection of the 9 Road and Landsburg Road SE. This intersection is immediately north of the Landsburg Road bridge that spans the Cedar River. The gravel-surfaced single lane 9 Road runs east from here all the way to SPU facilities at Cedar Falls. Landsburg Road SE is a moderately traveled, well-maintained, two lane rural county road. Immediately west of this intersection is a graveled parking area operated by King County. It serves park visitors and others seeking access to the Cedar River downstream from SPU's diversion dam. Additional parking is provided on SPU's property on the east side of the intersection adjacent to the river's edge. This is a large graveled open area currently bounded by the river to the south, Landsburg Road SE to the west, trees and brush to the north and a sliding vehicular security gate, fencing and pedestrian passage chicane to the east.

Tetra Tech surveyed this intersection in December 2009 and initially was directed to conduct an evaluation to determine if it met appropriate road standards. After a review of the *Cedar River Sockeye Hatchery Environmental Impact Statement* (EIS) and its transportation study, this evaluation was not conducted. The EIS recommended that traffic at this intersection be controlled during the construction period when at times there may be considerable truck traffic in and out of the Landsburg site from the 9 Road. One problem identified by Landsburg staff is the occasional blocking of the access gate by vehicles during hot summer days when the park receives many visitors.

The following are the circulation and parking needs for this site:

- Parking at the gate area needs to be structured (striping and signs, including ADA).
- A paved accessible route from ADA parking should be provided from the parking area to the park site features, including the restrooms, exhibits and picnic tables.
- Park identification sign should be added.

9 Road

The 9 Road continues east from the security gate with access to the logged off contractor staging area to the north and the new Cedar River Sockeye Hatchery to the south. While an entry and exit to the hatchery parking area is provided on the 9 Road, under current plans these driveways will have secure manually operated gates and will not provide primary access to the hatchery site. Continuing east, the 9 Road intersects the primary driveway for the dam/treatment site. Plans are in place to provide a secure motorized gate at this location and a manual gate at the "backdoor" driveway located further to the east. Plans are also in place to construct a secure motorized gate across the 9 Road at a location beyond the hatchery site to further control access into the watershed.

Park Road

Branching from the 9 Road at the Landsburg Road SE entry gate (see Photo 3-1), the beginning of the Park Road leads southeast through Landsburg Park and advances west to the dam/treatment area near the river. SPU plans to retain this road and make it the primary entrance for the new Cedar River Salmon Hatchery. In order to access the hatchery site, staff and visitor vehicles will need to pass through a secure motorized gate at the intersection with the 9 Road and again at the south side of the hatchery site. The hatchery road is a gravel and dirt road that currently receives very low levels of traffic. The Park Road is currently used as an exit route for chemical delivery trucks serving the dam/treatment area, as well as for trucks serving fish operations during the sockeye salmon run.

Photo 3-1. 9 Road (left) and Park Road Just Inside the Gate at the Landsburg Road

Dam/Treatment Site

General Circulation

Most vehicles access this site from the primary entry drive at the 9 Road. Currently the drive climbs over an embankment to a narrow unpaved single traffic lane constricted by the green garage to the west and a concrete curb barrier the east. The curb barrier is associated with the existing fluoride loading and spill containment area adjacent to the fluoride tank installation. The vehicle path opens up after this constriction to a wide, unstructured and unpaved area and then down to a graveled area with an informal traffic circle with an island of lawn, shrubbery, large rocks and a flagpole. A roofed steel structure with overhead crane rail spans the circular drive at the V screen. Trucks can pass under this structure. Adjacent to the traffic circle are the dam and adjacent concrete paved area with three striped parking spaces, the screen house and after-bay, the treatment building, a lawn area with the old stone restroom buildings, the fish screen control building and the fish screen. Vehicles can exit from this area to the Park Road through what is currently a secure manual gate. A narrow single lane drive between the screen house and the treatment building connects to a large informal, unpaved area to the east. This area connects back to the 9 Road via an unimproved single lane driveway. This driveway is scheduled to receive a manual gate at its intersection with the 9 Road.

Parking

Parking at the site is predominantly unstructured. This often results in a haphazard scattering of vehicles. particularly when visitors are present. It can also cause maneuvering problems for delivery trucks. Some striped parking spots, including a designated ADA space (see Photo 3-2), are available adjacent to the dam. Informal parking areas are around the green garage (see Photo 3-3) and on the north side of the treatment building. Parking is particularly troublesome when flood events occur, as additional staff and possibly a logging crew come to the site to prevent buildup of waterborne debris against the dam.

Circulation Issues

The following are the primary circulation issues at the dam/treatment site:

- Insufficient turning/maneuvering space for chemical delivery trucks
- Difficult exiting for chlorine delivery trucks around tight turn and relatively steep grade at driveway north of treatment building
- Use of Park Road for exiting by delivery trucks requires manual gate operation
- Load/unload at green garage causes blocking
- Circulation around green garage area awkward, particularly with non-structured parking.

Transportation Needs

The following are the primary transportation needs at the dam/treatment site:

- Paving at drives, particularly on slopes
- Drive turns should be constructed to meet delivery truck turning radii
- Structure parking and delivery to prevent blocking
- Configure circulation to eliminate use of Park Road gate at the dam/treatment site
- Signs at 9 Road driveway and at parking areas.

Photo 3-2. ADA Parking at the Dam

Photo 3-3. Unstructured Parking Near Green Garage